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PLAN KALIN DAM IN BULGARIA

The Kalin Dam is located at the most isolated and inaccessible part of the Velikata Rilska Pustinya (Great Rila Desert). It is located at a height of about 2,400 meters on the south slope of the top of Kalin Mountain.

A steep and narrow highway, barely 2.5 meters in width, leads to the dam. Covering a distance of 8 kilometers, this highway reaches a height of 1,600 meters. High-powered trucks climb it in low gear, burn 140 liters of gas per 100 kilometers, and cover the distance in 1½ hours.

The 8-kilometer highway, spinning over the deep precipices of the Rila River valley, is only the first part of the complex transportation system which is used for the delivery of supplies to the dam. At the end of the 8-kilometer highway, the loads are transferred to a "Bremzberg" (braking incline) /funicular railway?/, which climbs along the almost perpendicular slope of the mountain, and for 10 minutes carries the loads 800 meters higher; from there, narrow-gauge "khaspeli" cars transport them to a narrow highway, 3.5 kilometers long, on which, at a height of 2,500 meters above sea level, Soviet trucks reach the highest part of the mountain.

In this part of the Rila Mountain there are no rivers or streams.

The purpose of the Kalin Dam is to bring water to the power plants in the valley without the use of a river, to accumulate rain and snow water, and to store the water high up in the mountain. The rainfall in this part of the country is abundant, amounting to 900 liters per square meter annually.

On the vast and waterless southern slope of the Kalin peak, the builders have chosen an almost level, waterless spot, which they have enclosed with a dam wall on its open side opposite the peak slope. Along the sides of the small dam thus formed, they are constructing long concrete canals, into which the accumulated water flows. The mountain canals are 10 kilometers long. /Lake/ Kalin has a capacity of one million cubic meters of water. But this quantity of water is still insufficient and must be at least tripled.

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In the deep divide below the top of the Kalin Mountain is situated Lake Karag'ol, which has a capacity of 2,500,000 cubic meters of water and is filled with rain and melting snow. The water of this lake will now flow under the mountain to the turbines of the power plants, instead of flowing into the Bistritsa River as previously.

The builders of the Kalin Dam are boring a tunnel through the granite of the mountain. This tunnel will be 1,700 meters long and will connect the bottom of Lake Karag'ol with the other side of the mountain. Through a perpendicular shaft, Lake Kalin is connected with the tunnel, and in this way the two lakes create gigantic capillary vessels with a total capacity of 3,500,000 cubic meters of water. To increase the capacity of Lake Karag'ol, a 16.5-meter dam is being erected. This will increase the depth of the lake to 53 meters.

Through the shaft and the tunnel, the water of Lake Kalin will be emptied into Lake Karag'ol which is at a lower level, so that it can collect new quantities of water. The waters of Lake Karag'ol will be directed through the pipes to the power plants.

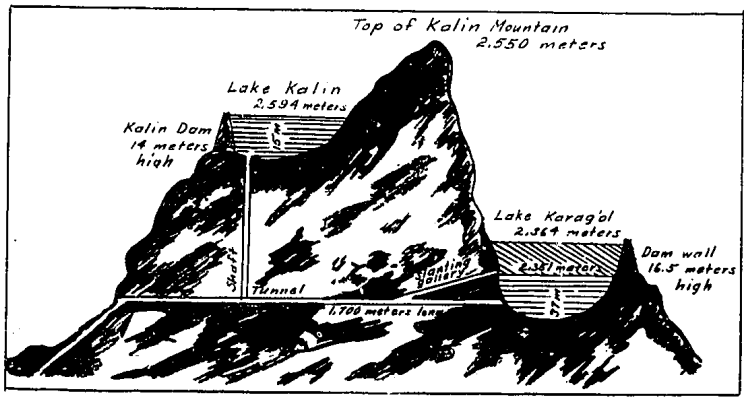
The dam wall on the bank of Lake Karag'ol is under construction, and the tunnel is almost completed. The lake itself must be deepened by 30 meters.

Upon the advice of a Soviet specialist, the last 2 meters of the tunnel near the lake have not been dug, for safety reasons; instead, a slanting gallery has been projected, which leads to the water level of Lake Karag'ol. Through this gallery, huge steel pipes will be installed and connected in such a way that one end will reach the horizontal tunnel through the slanting gallery and the other end will be submerged to the bottom of the lake. The waters of the lake will start to flow with a capacity of 600 liters per second through the tunnel to the power plants. This water will be used for producing 3,000,000 kilowatt-hours of electric power [per year], which is worth about 30 million leva.

The drainage of the lake must be completed by the end of August 1951 so that the tunnel can be bored by 15 September, as winter begins about 1 October.

About 200 laborers blast the rocks, cut stones, transport them, and lay them on the dam wall. The administration offices of the dam are located in wooden huts, 2,460 meters above sea level.

The dam will be definitely completed during 1952. The appended sketch shows the entire project discussed in this article.



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